Consequences of prosocial and antisocial teammate behaviour in adolescent soccer players:

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SECOND REVISION

Prosocial and antisocial behaviors in adolescent male soccer players

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Abstract

Objective: This study examined (a) whether prosocial and antisocial teammate behaviors are related to athletes' enjoyment, anger, effort, perceived performance, and commitment; (b) the mediating role of anger, enjoyment, and perceived performance on some of these relationships; and (c) whether any of these relationships are moderated by motivational climate.

Design: Cross-sectional.

Method: Adolescent male soccer players (N = 358, M age = 14.48 yrs) completed questionnaires assessing the aforementioned variables. The results were analysed using structural equation modelling (EQS 6.1; Bentler, 2003).

Results: Prosocial teammate behavior was positively related to effort, perceived performance, and commitment and these relationships were mediated by enjoyment. The relationships between prosocial teammate behavior and perceived performance and commitment were mediated by effort and perceived performance, respectively. In contrast, antisocial teammate behavior was positively related to anger and negatively related to effort and perceived performance. Mastery and (performance) climates moderated the relationships between prosocial and (antisocial) teammate behaviors and enjoyment as well as perceived performance, with a stronger relationship at higher levels of the climates.

Conclusion: The findings highlight the potential consequences of prosocial and antisocial teammate behaviors and the importance of coach-created motivational climate in adolescents. Future moral research in sport should employ objective measures to capture actual teammate behaviors.

Prosocial and antisocial behaviors in adolescent male soccer players

Prosocial and antisocial behaviors have received much research attention over the past two decades (see Kavussanu & Stanger, 2017). Prosocial behavior is voluntary behavior intended to help or benefit others (Eisenberg & Fabes, 1998), for example helping a player off the floor or congratulating another player after good play, while antisocial behavior is behavior intended to harm or disadvantage others (Sage, Kavussanu, & Duda, 2006), for example, verbally abusing or trying to injure another player. Both prosocial and antisocial behaviors take place in sport (Kavussanu & Boardley, 2009), and a large number of studies have examined antecedents of these behaviors (see Kavussanu & Stanger, 2017). Recently, researchers have started to investigate consequences of these behaviors for the recipient (e.g., Al-Yaaribi & Kavussanu, 2017; Al-Yaaribi, Kavussanu, & Ring, 2016).

Research pertaining to prosocial and antisocial behaviors has been guided by the social cognitive theory of moral thought and action (Bandura, 1991). This theory proposes that the social environment (e.g., significant others, peers) plays an important role in shaping individuals' thoughts, feelings, and actions; the person and social environment function as interacting determinants affecting each other bidirectionally. Bandura (1991) also argued that one should determine the morality of the conduct by considering the consequences of behavior for others. For example, one's transgressive acts can have negative consequences for the recipient, regardless of the thoughts or motives for committing such acts. Bandura (1999) has also distinguished between two aspects of morality, proactive and inhibitive, which pertain to the power to act humanely and refrain from acting inhumanely toward others, respectively. In the context of sport, the terms prosocial and antisocial behavior have been used to refer to these two aspects of morality (Kavussanu & Boardley, 2009).

Consequences of Prosocial and Antisocial behavior for the Recipient

Past research (e.g., Hodge & Lonsdale, 2011; Kavussanu & Boardley, 2009) has examined prosocial and antisocial behaviors toward teammates (e.g., congratulating or verbally abusing a teammate) or opponents (e.g., helping an injured opponent and criticizing an opponent). These behaviors could have consequences for the recipient. The present research focused on prosocial and antisocial behaviors directed only toward teammates, because these behaviors, particularly the prosocial ones, can have consequences for motivation and subsequent performance of the recipient and the team (Kavussanu & Boardley, 2009). In addition, one has more contact with teammates than opponents, therefore teammate behaviors should have more lasting consequences for the recipient.

The potential consequences of prosocial and antisocial teammate behaviors have been investigated in two cross-sectional studies, both of which employed adult athletes. In the first study, Al-Yaaribi et al. (2016) asked soccer and basketball players right after a match to report the frequency of their teammates' behaviors toward them, and their own enjoyment, anger, effort, and perceived performance during the match; participants also indicated their commitment for playing for their team. The results showed that perceived prosocial teammate behavior was positively related to the recipient's effort, performance, and commitment, both directly and indirectly through enjoyment. In contrast, the recipients of antisocial teammate behavior reported more anger, less effort, and poorer performance. Antisocial teammate behavior was also indirectly related to effort and commitment via anger and performance, respectively. The second study (Al-Yaaribi & Kavussanu, 2017) showed that perceptions of prosocial teammate behavior during matches of a competitive season were positively related to task cohesion and negatively related to burnout both directly and indirectly via positive affect. The reverse pattern of relationships was observed between antisocial teammate behavior and task cohesion and burnout, with negative affect mediating these relationships.

To date, no study has investigated consequences of teammate prosocial and antisocial behaviors in adolescents. The presence of such behaviors in adolescents has been reported in previous research. For example, Shields, Bredemeier, LaVoi and Power (2005) assessed athletes' perceptions of sport-related poor (similar to antisocial) and good (similar to prosocial) behaviors. Results showed that athletes reported high frequency of poor sport behavior and 13% of them admitted having made fun of a less-skilled teammate. In contrast, approximately 89–96% of athletes acknowledged that their teammates engaged in prosocial behavior as reflected by two items 'on our team we try our best to be good sports' and 'on our team we encourage each other to be good sports'. Also, Shields, LaVoi, Bredemeier, and Power (2007) found a high rate of poor sport behaviors (e.g., "say things to hurt, anger, or upset an opponent", "make fun of a less skilled teammate") with males scoring higher than females in such behaviors.

In a study of adolescent soccer players, Omli and LaVoi (2009) found that players reported moderate frequency of antisocial behavior (e.g., yelling at teammates) with peak incidents of such behavior around the age of 16. In addition, Kavussanu, Seal, and Phillips (2006) observed prosocial and antisocial behaviors in videotaped soccer games of male players (aged 12–17). It is essential to examine adolescent athletes' moral behavior as at this stage of life various aspects of social and moral behaviors are adopted (Bredemeier, 1985; Conroy, Silva, Newcomer, Walker, & Johnson, 2001; Stephens & Bredemeier, 1996). These behaviors could potentially influence adolescent relationships in sport, which are important for athletes' psychological development (see Smith, 2007).

In line with Al-Yaaribi et al.'s (2016) findings, we examined whether teammate behaviors were related to enjoyment, anger, effort, performance, and commitment. The recipients of prosocial teammate behavior may perceive trust in their athletic abilities and be motivated to perform with maximum effort during matches. Such behavior may also lead the

recipients to have an enjoyable experience and perceive positive social relationships with teammates, which are key predictors of commitment (e.g., Scanlan, Carpenter, Simons, & Schmidt, 1993). In contrast, antisocial teammate behavior may demotivate the recipients from trying hard, as they may interpret such behavior as disapproval of their abilities. The recipient may also experience anger as they may feel offended or disrespected by their teammates' antisocial behavior. Indeed, increased provocation was linked to increased anger in past research (Stanger, Kavussanu, McIntyre, & Ring, 2016).

The Role of Motivational Climate

A social-environmental variable which has been linked to moral behavior in sport is motivational climate. This construct, which is drawn from achievement goal theory (Nicholls, 1989), refers to the situational goal structure created by significant others such as coaches (Ames, 1992), and is typically assessed via athletes' perceptions (e.g., van de Pol, Kavussanu, & Ring, 2012). Two distinct types of motivational climate have been examined in sport: mastery and performance (Ames, 1992). In a mastery climate the focus of the coach is on skill development, effort, and individual improvement, whereas in a performance climate the emphasis is on interpersonal comparison, normative feedback, and public evaluation. In sport, mastery and performance motivational climates have generally been associated with adaptive and maladaptive outcomes, respectively. For example, perceptions of a coach-created mastery climate have been linked with prosocial behavior toward teammates, enjoyment, effort, perceived competence, and commitment (e.g., Boardley & Kavussanu, 2009; Ntoumanis, Taylor, & Thøgersen-Ntoumani, 2012; Reinboth & Duda, 2004; van de Pol et al., 2012), whereas perceptions of a coach-created performance climate have been associated with antisocial behavior toward teammates, tension, anxiety, low effort, and intention to drop out (e.g., Boardley & Kavussanu, 2009; Ntoumanis et al., 2012; van de Pol et al., 2012). It is possible that the relationship between teammate behaviors and outcomes

may vary depending on players' perceptions of motivational climate in their team. In this study, we explored whether a mastery motivational climate augmented the positive relationship between prosocial teammate behavior and the recipient's enjoyment.

The Present Study

In sum, most previous research has focused on antecedents of prosocial and antisocial behaviors, particularly those directed toward opponents (see Kavussanu & Stanger, 2017). Although the potential consequences of these behaviors for the recipient have been investigated in adult athletes (e.g., Al-Yaaribi & Kavussanu, 2017; Al-Yaaribi et al., 2016), we do not know whether previous findings would be replicated in a younger sample of athletes. In this study, we extended previous work to adolescent male soccer players. We studied this population due to previous research showing high frequency of both prosocial and antisocial teammate behaviors in these athletes compared to basketball and hockey players, and higher in males than females (Al-Yaaribi et al., 2016; Kavussanu & Boardley, 2009; Kavussanu, Stamp, Slade, & Ring, 2009). In addition, soccer is a very popular sport, so findings are expected to have implications for many athletes.

The first purpose of this study was to examine whether the findings of Al-Yaaribi et al. (2016) on adult athletes would be replicated in adolescent soccer players. Specifically, we investigated whether perceived prosocial and antisocial teammate behaviors (hereafter referred to as prosocial and antisocial behaviors) predicted enjoyment, anger, effort, perceived performance (hereafter referred to as performance), and commitment, both directly and indirectly via enjoyment, anger, and performance. We hypothesized that prosocial behavior would be positively related to effort, performance, and commitment directly and indirectly via enjoyment. We also expected that prosocial behavior would be indirectly related to commitment via performance. In contrast, we hypothesized that antisocial behavior would be: (a) positively related to anger and negatively related to effort and performance; (b)

indirectly related to effort via anger; and (c) indirectly related to commitment via performance. The second purpose of this study was to examine whether mastery and performance climate, respectively, moderate the relationships between prosocial and antisocial behaviors, enjoyment, anger, effort, performance, and commitment. Due to the lack of previous research in this area, this purpose was exploratory and no hypotheses were proposed.

Method

Participants

Participants were 358 male soccer players, aged 10–18 years (M = 14.48 SD = 2.19), recruited from 15 clubs in the United Kingdom. At the time of data collection, they had played for an average of 2.83 (SD = 2.15) years for their current team at various levels of competition: local (n = 210; 58.3%), district (n = 27; 7.5%), academy (n = 59; 16.4%), club (n = 53; 17.7%), national (n = 6; 1.7%), and other (n = 5; 1.4%). Finally, they had played 1–4 (15.6 %), 5–8 (13.6 %), 9–12 (24.4 %), 13–16 (18.9 %), 17–20 (11.7 %), and 21 or more (15.8 %) competitive matches for their teams during the season.

Power analysis for the proposed model was conducted using Westland's (2010) a priori sample size algorithm (www.danielsoper.com) for structural equation modelling. This algorithm requires the anticipated effect size, statistical power levels, the number of observed (all the measurement items/indicators) and both endogenous and exogenous latent variables in the model. This analysis indicated that in order to detect a small effect size of .10, a minimum sample size of 88 was required to have a statistical power level of .80 at a probability level of .05.

Procedure

Once we obtained ethical approval from the University Ethics Committee, we sent an introductory letter outlining the aims and protocol of the study with example questionnaire

items to soccer coaches. Once they agreed to help with data collection, information sheets and parental consent forms were distributed either by the first author or by one of the research assistants. Participants who returned the signed parental consent form were eligible to take part in the study. Either prior or after a training session, they were informed about the study, that participation was voluntary, they could withdraw at any time, and data would be used only for research purposes and kept confidential. Participants were asked to think about matches they played during the season and complete the questionnaire individually. The measures in the questionnaire were counterbalanced to avoid order effects.

Measures

Teammate behavior. Athletes' perceptions of teammate behavior were measured using adapted versions of the teammate behavior subscales of the Prosocial and Antisocial Behavior in Sport Scale (PABSS; Kavussanu & Boardley, 2009). The prosocial teammate behavior scale consists of four items measuring behaviors toward teammates (e.g., giving constructive feedback to a teammate, encouraging a teammate). The antisocial teammate behavior subscale consists of five items (e.g., criticizing a teammate, verbally abusing a teammate). An additional item (supported me) was added to increase prosocial teammate behavior scale's internal reliability in line with previous research (Al-Yaaribi & Kavussanu, 2017; Al-Yaaribi et al., 2016). Participants were asked to indicate how often their teammates had engaged in each behavior toward them during matches played in the season. They responded to the stem "This season, my teammates…" followed by items referring to prosocial (e.g., encouraged me) and antisocial (e.g., verbally abused me) behaviors on a 5-point Likert scale anchored by 1 (*never*) to 5 (*very often*). The adapted version of teammate behavior subscales has shown acceptable levels of internal consistency, and confirmatory factor analysis has shown a very good fit of the model to the data (Al-Yaaribi et al., 2016).

Enjoyment. Enjoyment was assessed with the four-item enjoyment subscale of the Sport Commitment Model (Scanlan et al., 1993). Participants were asked to answer four questions regarding their level of enjoyment during matches played in the season on a Likert scale ranging from 1 (*not at all*) to 5 (*very much*). Example questions are: "Did you like playing for this team? and "Did you have fun playing for this team?" The psychometric properties of this subscale were strong ($\alpha \geq .90$) with youth sport participants (Scanlan et al., 1993).

Anger. The anger subscale of the Sport Emotion Questionnaire (SEQ; Jones, Lane, Bray, Uphill, & Catlin, 2005) was used to assess anger experienced by the players during matches played in the season. The subscale consists of four items (e.g., irritated, annoyed). Players were asked to recall to what extent they felt this way and to respond to the stem "During the matches I have played this season, I felt…" by responding on a Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). This subscale has shown very good internal consistency ($\alpha = .84$; Jones et al., 2005).

Effort. The effort subscale of the Intrinsic Motivation Inventory (Ryan, 1982) was used to measure participants' effort exerted during matches they played in the season. Reponses ranged from 1 (*not true at all*) to 7 (*very true*) on a 5- point Likert scale. The stem was "During the matches I have played this season," followed by four items measuring effort (e.g., "I tried very hard while playing"). Previous research has demonstrated very good internal consistency ($\alpha = .84$) for this subscale (McAuley, Duncan, & Tammen, 1989).

Perceived performance. Participants' perceived performance was measured using a 5-item scale adapted from a measure of subjective improvement (Balaguer, Duda, & Crespo, 1999). The scale required the participants to rate their overall performance as well as the technical (e.g., ball control), tactical (e.g., set play), physical (e.g., endurance), and psychological (e.g., regrouping after poor play) aspects of their performance during matches

they had played in that season. Participants rated these items on a 10-point scale ranging from 1 (*very poor*) to 10 (*excellent*). This scale has been found to have very good internal consistency ($\alpha = .87$).

Sport commitment. The 4-item of the Sport Commitment Model (Scanlan et al., 1993) was used to assess players' psychological desire to continue participation with their team. For each item, participants responded on a 5-point Likert scale. The items and respective anchors were: "How dedicated are you to keep playing for this team?" with anchors of 1 (*not at all dedicated*) and 5 (*very dedicated*); "How hard would it be for you to quit playing for this team?" with anchors of 1 (*not at all*) and 5 (*very hard*); "How determined are you to keep playing for this team?" anchors ranged from 1 (*not at all determined*) to 5 (*very determined*); "What would you be willing to do to keep playing for this team?" anchors ranged from 1 (*nothing at all*) to 5 (*a lot of things*). This scale has demonstrated very good internal consistency ($\alpha \geq .88$) with a youth sample (Scanlan et al., 1993).

Coach-created motivational climate. Mastery and performance climates created by the coach were assessed with a short version of the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2; Newton, Duda, & Yin, 2000). The PMCSQ-2 is a 33-item scale, but in this study we used only 16 items pertaining only to coach behaviors relevant to the two climates; eight items measure the mastery climate (e.g., "Emphasizes always trying your best" and "Encouraged players to help each other") while the remaining eight items measure performance climate (e.g., "Notices only the top players" and "Favoured some players more than others"). The stem: "This season, my coach…" preceded each item and responses were given on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The abbreviated version of the PMCSQ-2 has shown good internal consistency with alpha coefficients of .88 for the mastery and .87 for the performance climate subscales (Newton et al., 2000)

Results

Preliminary Analyses

Prior to the main analysis, data were inspected for normality, missing values, and outliers for all study variables following the procedure outlined by Tabachnick and Fidell (2007). A small proportion of missing data (less than 5%) was identified and were replaced with the mean of their respective variable. 13 extreme outliers (i.e., values higher or lower than 3 *SD*s from the mean) were found and removed. Examination of skewness and kurtosis for all variables (see Table 1) indicated univariate normality based on the cut-off values of skewness <3.0 and kurtosis <10.0 (Kline, 2016).

Descriptive Statistics, Correlation Analysis, and Scale Reliabilities

Descriptive statistics and Cronbach's alpha coefficients for all study variables appear in Table 1. Players reported that, during matches of the season, their teammates displayed sometimes-to-often prosocial behavior and never-to-sometimes antisocial behavior. Players reported enjoyment, effort, performance, commitment, and mastery climate above the mid-point of the scale, and below the mid-point of the scale for anger, and performance climate. All of the main teammate behaviors correlations were in the expected direction. Following new recommendations for effect size in studies of individual differences (Gignac & Szodorai, 2016), values of .10, .20, and .30 were interpreted as small, medium, and large effects, respectively. All scale scores showed very good to excellent internal consistency.

Main Analysis

The first purpose of this study was to examine whether prosocial and antisocial behaviors were related to enjoyment, anger, effort, performance, and commitment. We examined this purpose using Structural Equation Modelling (EQS 6.1; Bentler, 2003), and we followed the two-step model building approach recommend by Anderson and Gerbing (1988). The first step involves testing the measurement model using Confirmatory Factor

Analysis (CFA). In the second step, the hypothesized structural model is tested. Inspection of Mardia's multivariate coefficient (65.07) indicated that the data distribution departed from multivariate normality. Therefore, we used the Robust Maximum Likelihood (MLR) method. We also used bootstrapping to test the significance of each standardized parameter estimate using 1000 resamples and 95% Confidence Intervals (CIs). The estimated parameter is considered significant when its CI does not contain zero (Byrne, 2006; Preacher & Hayes, 2008).

Several fit indices were used to assess the fit of the model to the data: the Satorra–Bentler chi square (S-Bχ^2), the Robust Comparative Fit Index (R-CFI), the Bentler-Bonett Non-Normed Fit Index (R-NNFI), the Standardized Root Mean Square Residual (SRMR), the Robust Root Mean Square Error of Approximation (R-RMSEA) and its associated 90% Confidence Interval (CI). Values of the CFI and NNFI close to or above .95, values of the SRMR and RMSEA close to or below .08 and .06, respectively, and the lower end of 90% CI of the RMSEA containing the value of .05 represent an excellent fit of the hypothesized model to the data (Hu & Bentler, 1999).

The results of the CFA showed that all scales had a good factor structure (see Table 2). The goodness of fit indices for the full measurement model were: S-Bχ^2 (427) = 750.83, p < .001; R-CFI = .94; R-NNFI = .91; SRMR = .04; R-RMSEA = .06 (90% CI of the R-RMSEA = .03, .05) and indicated a good fit to the data; the standardised factor loadings (FL) were: FL_M = .63 (FL_{range} = .40–.84). The next step was to test the structural model which revealed that the model fit the data adequately: S-Bχ^2 (417) = 575.12, p < .001; R-CFI = .93; R-NNFI = .92; SRMR = .06; R-RMSEA = .07 (90% CI of the R-RMSEA = .02, .04).

The standardized path coefficients and explained variances for the structural model are presented in Figure 1, where it can be seen that: prosocial behavior was positively related to enjoyment, effort, performance, and commitment; enjoyment was positively related to effort,

performance, and commitment; and effort was positively related to performance, which in turn was positively related to commitment. Antisocial behavior was positively related to anger and negatively related to effort and performance. The effect sizes of the significant associations were generally in the moderate-to-large range (Gignac & Szodorai, 2016). Bootstrapped parameter estimates are shown in Table 3. Prosocial and antisocial behaviors explained 35% and 18% of the variance in enjoyment and anger, respectively. The two behaviors, enjoyment, and anger explained 28% of the variance in effort. Behaviors, enjoyment, anger, and effort explained 40% of the variance in performance. Behaviors, enjoyment, anger, effort, and performance explained 53% in commitment.

Mediation Analysis

Next, we examined whether: (a) enjoyment mediated the relationship between prosocial behavior and effort, performance, and commitment; and (b) performance mediated the relationship between prosocial behavior and commitment. Also, since anger had no effect on effort, we examined only whether the relationship between antisocial behavior and commitment was mediated by performance. For this analysis, we requested the decomposition of effects, where an effect is broken into direct, indirect, and total effects (Bollen, 1987). Direct effects are the effects of an independent variable (e.g., prosocial behavior) on a dependent variable (e.g., commitment) after accounting for the effect of mediating variable(s) (e.g., enjoyment); indirect effects are the effects of an independent variable on a dependent variable via the mediating variable (s); and total effects are the sum of the direct and indirect effects. The magnitude of the mediated effect is expressed by the percentage of the total effect accounted for by the indirect effect.

The total, direct and indirect effects of prosocial behavior on effort mediated by enjoyment were: .41 $p < .01$; .20, $p < .001$; and .21, $p < .05$, respectively; on performance mediated by enjoyment and effort were .42, $p < .001$; .20, $p < .01$; and .22, $p < .05$,

respectively; on commitment mediated by enjoyment, effort, and performance were .57, $p <$ .001; .22, $p < .03$; and .35, $p < .01$, respectively. The percentages of the total effect of prosocial behavior on the outcome variables through the mediator(s) were 51% for effort, 79% for performance, and 71% for commitment. The total, direct and indirect effects of antisocial behavior on performance mediated by anger and effort were: –.23, $p < .05$; –.21, $p < .05$; and –.02, $p < .05$, respectively; on commitment mediated by anger, effort, and performance were –.16, $p > .05$; .08, $p > .05$; and –.24, $p < .05$, respectively. The percentages of the total effect of antisocial behavior on the outcome variables through the mediators were 87% for performance and 49%, for commitment.

The significance of the standardized indirect effects was assessed using bootstrapping procedures (Shrout & Bolger, 2002; Preacher & Hayes, 2008). This analysis indicated that enjoyment mediated the relationships between prosocial behavior, effort, performance and commitment. Performance mediated the prosocial behavior-commitment relationship. The negative relationship between antisocial behavior and commitment was mediated by performance. Additionally, we found that effort mediated the prosocial and antisocial behaviors-performance relationships (see Table 3).

Moderation Analysis

Finally, we examined whether the relationships between prosocial and antisocial behaviors and the outcomes were moderated by motivational climate. This analysis was carried out using Hayes' (2013) PROCESS macro (version 2.16) for SPSS (Model 1). Moderation occurs when the confidence interval of the interaction between the independent variable and the moderator does not include zero (Preacher & Hayes, 2008). In this analysis, we used a 95% confidence interval with 1,000 bootstrap resamples. To probe the interaction effect, simple slope analysis was conducted. This approach selects three arbitrary points (i.e., mean and 1*SD* above and below the mean) of the moderator to estimate the effect of the

predictor on the outcome (Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003). We found three significant interaction effects: prosocial behavior x mastery climate on enjoyment, prosocial behavior x mastery climate on performance, and antisocial behavior x performance climate on performance. These findings are shown in Figures 2A, 2B, and 3, respectively.

Figure 2A shows the interaction between prosocial behavior and mastery climate for enjoyment, (b = .41; 95% CI: .20, .64, t = 3.55, p < .001). Simple slope analysis revealed that prosocial behavior predicted enjoyment at mean (b = .38; 95% CI: .22, .53, t = 4.77, p = .000) and high (b = .65; 95% CI: .53, .77, t = 10.75, p = .000), but not at low levels (b = .10; 95% CI: –.18, .40, t = .72, p = .47) of mastery climate. Figure 2B shows the interaction between prosocial behavior and mastery climate for performance (b = .40; 95% CI: .10, .70, t = 2.50, p < .01). The simple slope was significant for players who reported perceptions of moderate (b = .53; 95% CI: .29, .78, t = 4.35, p = .000) or high (b = .79; 95% CI: .54, 1.04, t = 6.28, p = .000) levels of mastery climate, but not for those who perceived a low mastery climate (b = .28; 95% CI: –.09, .65, t = 1.48, p = .14). These findings indicate that the higher the mastery climate, the stronger the positive association between prosocial behavior and enjoyment as well as performance.

Figure 3 shows the antisocial behavior by performance climate interaction for performance (b = –.21; 95% CI: –.36, –.06, t = –2.75, p < .006). Simple slope analysis revealed that antisocial behavior negatively predicted performance when perceived performance climate was moderate (b = –.30; 95% CI: –.60, –.01, t = –2.07, p = .03) or high (b = –.51; 95% CI: –.76, –.27, t = –4.18, p = .000), but not when it was low (b = –.09; 95% CI: –.49, .29, t = –.49, p = .62), indicating that the higher the performance climate, the stronger the negative association between antisocial behavior and performance.

Discussion

Recent research has demonstrated that prosocial and antisocial teammate behaviors are related to important outcomes for the recipient of the behavior (Al-Yaaribi & Kavussanu, 2017; Al-Yaaribi et al., 2016). In this study, we sought to: (a) replicate the work of Al-Yaaribi et al. (2016) with an independent sample of adolescent soccer players; and (b) extend this work by investigating the role of motivational climate on the relationship between prosocial and antisocial teammate behaviors, enjoyment, anger, effort, performance, and commitment. Below, we discuss the potential consequences of prosocial and antisocial behaviors, followed by the moderation findings.

Consequences of Prosocial Behavior

The first purpose of this study was to examine the relationship between prosocial behavior, enjoyment, effort, performance, and commitment. Our findings show that when players perceived that during matches they had played in the season, their teammates provided encouragement and support, gave them positive and constructive feedback, and congratulated them for good play, they were more likely to enjoy playing the matches, exert more effort, perceive that they performed well, and report higher commitment for playing for their team. It is reasonable to expect that engaging in prosocial teammate behavior could create a supportive team environment that is highly likely to promote an enjoyable sport experience and enhance behavioral outcomes and sport participation. These findings replicate those of Al-Yaaribi et al. (2016) in adolescent male soccer players and provide further support for Bandura's (1991) assertion that the social environment can shape an individual's feelings, thoughts, and behaviors.

Consistent with our hypothesis and previous research (Al-Yaaribi et al., 2016), enjoyment mediated the relationships between prosocial behavior, effort, performance, and commitment. The amount of enjoyment experienced by the recipients of prosocial teammate behavior may have led them to exert more effort, perceive better performance, and continue

participation in their team. Enjoyment has been positively linked with effort and performance in past research (e.g., Cooke, Kavussanu, McIntyre, & Ring, 2013; Puca & Schmalt, 1999). Taken together with past research, our findings suggest that enjoyment should be considered as an important variable in the social team environment because of its potential to influence effort and performance. The observed paths between enjoyment, effort, and performance were moderate-to-large in effect size. The mediating role of enjoyment is in line with Bandura's (1991) theory regarding the role of affective states in explaining the effects of the social environment on individuals' behavior.

Both enjoyment and perceived performance mediated the prosocial behavior-commitment relationship. Enjoyment and perceived performance were positively related to team commitment. Previous research has shown that enjoyment and performance are key determinants of commitment (e.g., Carpenter, Scanlan, Simons, & Lobel, 1993; Ullrich-French & Smith, 2009). In the present study, the effect size of the link between enjoyment and commitment was large. In line with previous research (Al-Yaaribi et al., 2016), our findings suggest that prosocial behavior among teammates has the potential to increase the recipient's commitment indirectly through increasing enjoyment and performance.

Consequences of Antisocial Behavior

Consistent with the work of Al-Yaaribi et al. (2016), the present findings showed that antisocial behavior was positively related to anger and negatively related to effort and performance. The recipients of verbal abuse, swearing, and criticism from one's teammates during the matches played over the season, tended to report more anger, exerted less effort, and perceived poorer performance. As antisocial behavior has the potential to harm others' physical and psychological well-being (Kavussanu & Boardley, 2009), such behavior may have negative consequences for athletes' achievement. Bandura (1991) has proposed that transgressive behavior is associated with negative consequences for the recipient. It is

possible that the recipients of antisocial behavior, particularly those with high sensitivity to others' criticism, felt offended. A positive relationship has been revealed between increased provocation and anger during competition (Stanger et al., 2016). The recipients of antisocial behavior may also become demotivated to put forth the effort to play which could influence their performance.

The hypothesis that anger would mediate the antisocial behavior-effort relationship was not supported. Anger was not related to effort in the tested model. Thus, we did not replicate the finding of Al-Yaaribi et al. (2016), who showed that anger was positively related to effort. This could be due to the different age of participants. Al-Yaaribi et al.'s (2016) participants were adults, whereas participants in the current study were adolescents, which might explain the discrepancy in the findings. The effect of anger on athletes' effort may vary based on age. The discrepancy in the findings could also be attributed to the difference in the procedures used in the two studies. In Al-Yaaribi et al.'s (2016) study, participants completed questionnaires immediately after a match they had played, while in the present study, participants were asked to think about matches being played over the whole season and completed the questionnaire before or after a training session. It is possible that anger experienced in a single match may influence effort temporarily, but this may not happen over the season, or recalled experiences of anger may be lower when referring to the season than to a match just played. Indeed, compared to our participants, the participants of Al-Yaaribi et al.'s (2016) study reported more anger.

Congruent with Al-Yaaribi et al.'s (2016) finding, performance mediated the antisocial behavior-commitment relationship. Players who perceived that their performance was poor during the matches they played in the season were less determined and willing to continue participation with their team. Antisocial behavior may have led the recipients of the behavior to perform worse, which, in turn, may have negatively influenced their commitment. In

previous research, a positive relationship has been found between perceptions of competence and continued sport participation in adolescent soccer players (Ullrich-French & Smith, 2009).

The **Moderating Role of Motivational Climate**

The second purpose of this study was to examine whether the relationships between teammate behaviors, enjoyment, anger, effort, performance, and commitment were moderated by motivational climate. Prosocial behavior was positively related to enjoyment and performance only for those who perceived moderate or high levels of a coach-created mastery climate. These positive relationships became stronger as the strength of the coach-created mastery climate increased. Thus, mastery climate augmented the relationship between prosocial teammate behavior, enjoyment and perceived performance. Typically, mastery climate has been associated with a variety of adaptive outcomes such as enjoyment and prosocial teammate behavior (e.g., Boardley & Kavussanu, 2009; Ntoumanis et al., 2012; van de Pol et al., 2012). Thus, it is not surprising that it augmented the link between prosocial behavior, enjoyment and performance.

The relationship between antisocial behavior and performance was moderated by performance climate, so that antisocial behavior was negatively related to performance only for players who perceived performance climate in their team to be high or moderate. This relationship became stronger as the players' perceptions of a coach-created performance climate increased. A performance climate is an ideal condition for intra-team competition and outperforming teammates and has been consistently linked with maladaptive outcomes such as low effort and antisocial teammate behavior (e.g., Boardley & Kavussanu, 2009; Reinboth & Duda, 2004; van de Pol et al., 2012). Thus, it is not surprising that perceived performance climate strengthened the negative effect of antisocial teammate behavior on the recipients' perceived performance.

Practical Implications

The findings of our study have some important implications for adolescent sport participation. The findings underline the importance of prosocial and antisocial teammate behaviors, which could have beneficial or detrimental consequences for the recipient's achievement and further support the role of peer interaction in athletes' outcomes and well-being (e.g., DeFreese & Smith, 2014; Smith, 2007). The findings suggest that players' perceptions of team environment could influence the effect of teammate behaviors on enjoyment and performance. Coaches working with adolescents should establish mastery climate enriched with frequent prosocial behavior among teammates, while diminishing the emphasis on outperforming others, interpersonal competition, and antisocial teammate behaviors.

Limitations of the Study and Directions for Future Research

The present study has a number of limitations. First, due to its cross-sectional design, assertions of causal relationships cannot be made. We have simply shown that our hypothesized model was consistent with the data. However, the reverse relationships are possible. For example, players with high levels of team commitment may be more likely to perform well and engage in more prosocial behavior toward their teammates. Field experiments or longitudinal studies could be used to explore the causal relationships between the study variables. Second, we measured perceived rather than actual teammate behaviors and performance. Researchers could employ objective measures to capture actual teammate behaviors and performance during games. Finally, our findings pertain only to male soccer players. Studies are needed to replicate the current findings across a variety of individual and team sports using female and male athletes.

Conclusion

The present study replicated Al-Yaaribi et al.'s (2016) findings, which examined the consequences of prosocial and antisocial teammate behaviors on the recipient's enjoyment, anger, effort, perceived performance, and commitment. This study extends our understanding of athletes's sport experience by examining teammate behaviors among adolescent team sport players. Our findings suggest that players' perceptions of motivational climate created by coaches may augment the relationship between prosocial and antisocial teammate behaviors and important outcomes.

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Endnote

No interaction effects between teammate behaviors and age were detected, indicating that the effect of teammate behaviors on the outcomes was not moderated by age.

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Table1

Descriptive Statistics, Alpha Coefficients, and Zero-Order Correlations (N = 358)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
Prosocial beh	3.69	0.81	(.83)								
Antisocial beh	1.82	0.76	-.20**	(.82)							
Enjoyment	4.28	0.89	.50**	-.24**	(.94)						
Anger	1.82	0.92	-.22**	.40**	-.30**	(.86)					
Effort	6.08	1.04	.34**	-.32**	.46**	-.14*	(.81)				
Performance	7.34	1.55	.36**	-.34**	.40**	-.31**	.47**	(.87)			
Commitment	3.92	0.96	.47**	-.30**	.60**	-.23**	.50**	.46**	(.87)		
Mastery clim	3.97	0.34	.40**	-.25**	.40**	-.14*	.40**	.30**	.40**	(.80)	
Performance clim	2.62	0.83	-.23**	.35**	-.23**	.17*	-.30**	-.30**	-.34**	-.35**	(.84)

Note. Alpha coefficients are presented on the diagonal. Possible rage of scores: 1 to 5 for all variables except for effort (1–7) and performance (1–10). Prosocial beh=prosocial behavior; Antisocial beh=antisocial behavior; Mastery clim=mastery climate; Performance clim=performance climate.

*$p < .01$; **$p < .001$.

Table 2

Results of Confirmatory Factor Analysis for Teammate behavior, Enjoyment, Anger, Effort, Performance, and Commitment

Variable	S-Bχ^2	*df*	R-CFI	SRMR	R-RMSEA (90% CI)
Teammate Behavior	77.02**	34	.95	.03	.07 (.04, .07)
Enjoyment	.39	2	1.00	.01	.06 (.00, .06)
Anger	27.39**	2	.94	.02	.02 (.02, .07)
Effort	5.32	2	.98	.03	.07 (.00, .14)
Performance	11.80*	5	.98	.02	.06 (.00, .14)
Commitment	5.15	2	.99	.01	.06 (.01, .10)

Note. S-Bχ^2 = Satorra–Bentler chi square; R-CFI = robust comparative fit index; SRMR = standardized root mean square residual; R-RMSEA = robust root mean square error of approximation; 90% CI = 90% confidence interval of the R-RMSEA.

*$p < .05$; **$p < .01$.

Table 3
Direct and Indirect Effects on Enjoyment, Effort, Performance, and Commitment

Parameter			Effect	95% CI
Direct effects				
Prosocial behavior	→	Enjoyment	.60	.47, .69
	→	Effort	.19	.02, .38
	→	Performance	.20	.03, .35
	→	Commitment	.22	.04, .38
Enjoyment	→	Effort	.35	.20, .50
	→	Performance	.23	.01, .40
	→	Commitment	.45	.29, .60
Effort	→	Performance	.24	.09, .40
Performance	→	Commitment	.18	.05, .31
Antisocial behavior	→	Anger	.42	.29, .55
	→	Effort	–.11	–.27, –.06
	→	Performance	–.21	–.34, –.04
	→	Commitment	–.01	–.13, .11
Anger	→	Effort	.05	–.07, .17
	→	Performance	.07	–.12, .14
	→	Commitment	.01	–.10, .09
Indirect effects of prosocial behavior via				
Effort	→	Performance	.26	.05, .11
Enjoyment	→	Effort	.21	.11, .32
	→	Performance	.31	.05, .24
	→	Commitment	.26	.15, .38
Performance	→	Commitment	.07	.01, .08
Indirect effects of antisocial behavior via				
Effort	→	Performance	–.03	–.07, –.01
Performance	→	Commitment	–.13	–.10, –.01

Note: CI = Confidence Interval

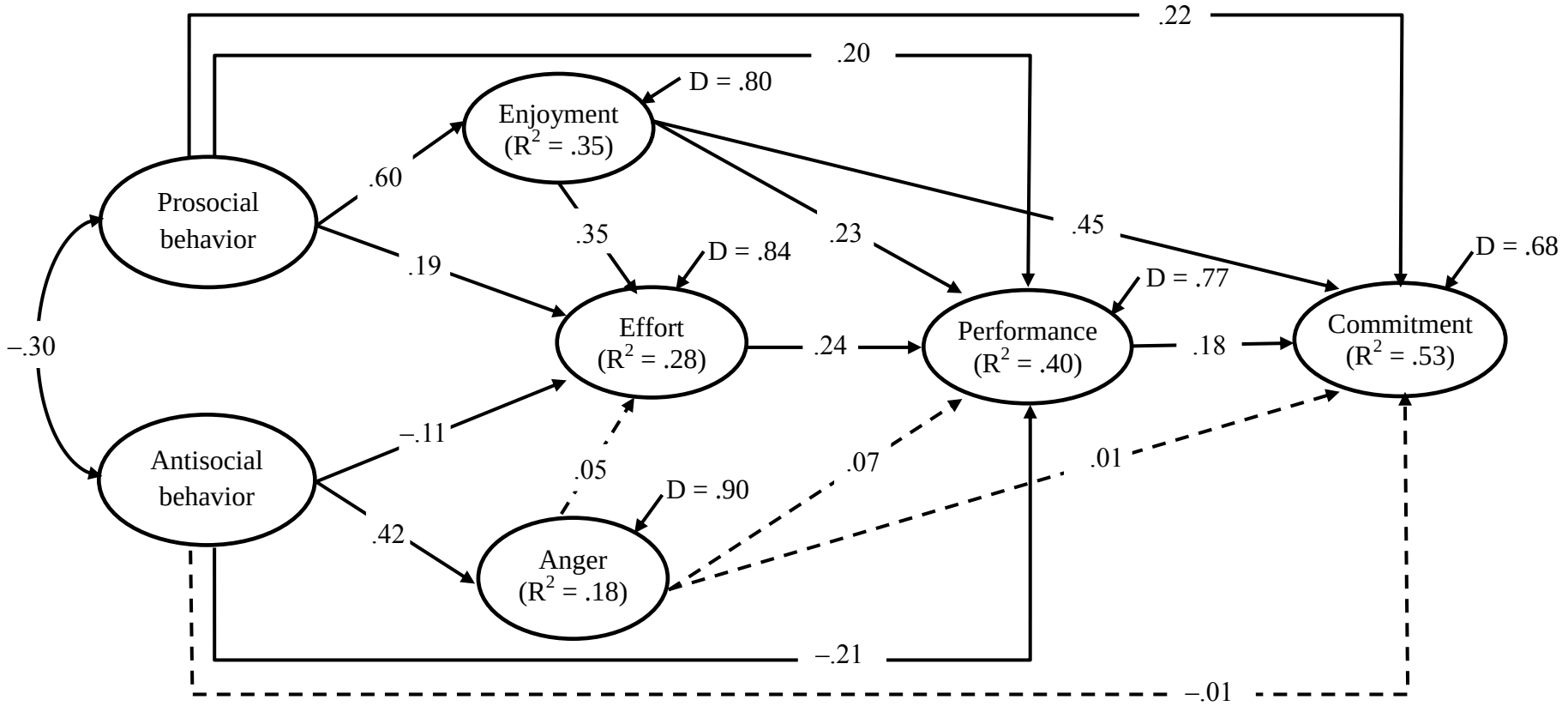

Fig. 1. Standardized path model depicting the relationships between prosocial and antisocial behaviors, emotion, effort, performance, and commitment. *Note.* Solid and dashed lines indicate significant ($p < .05$) and non-significant parameters, respectively.

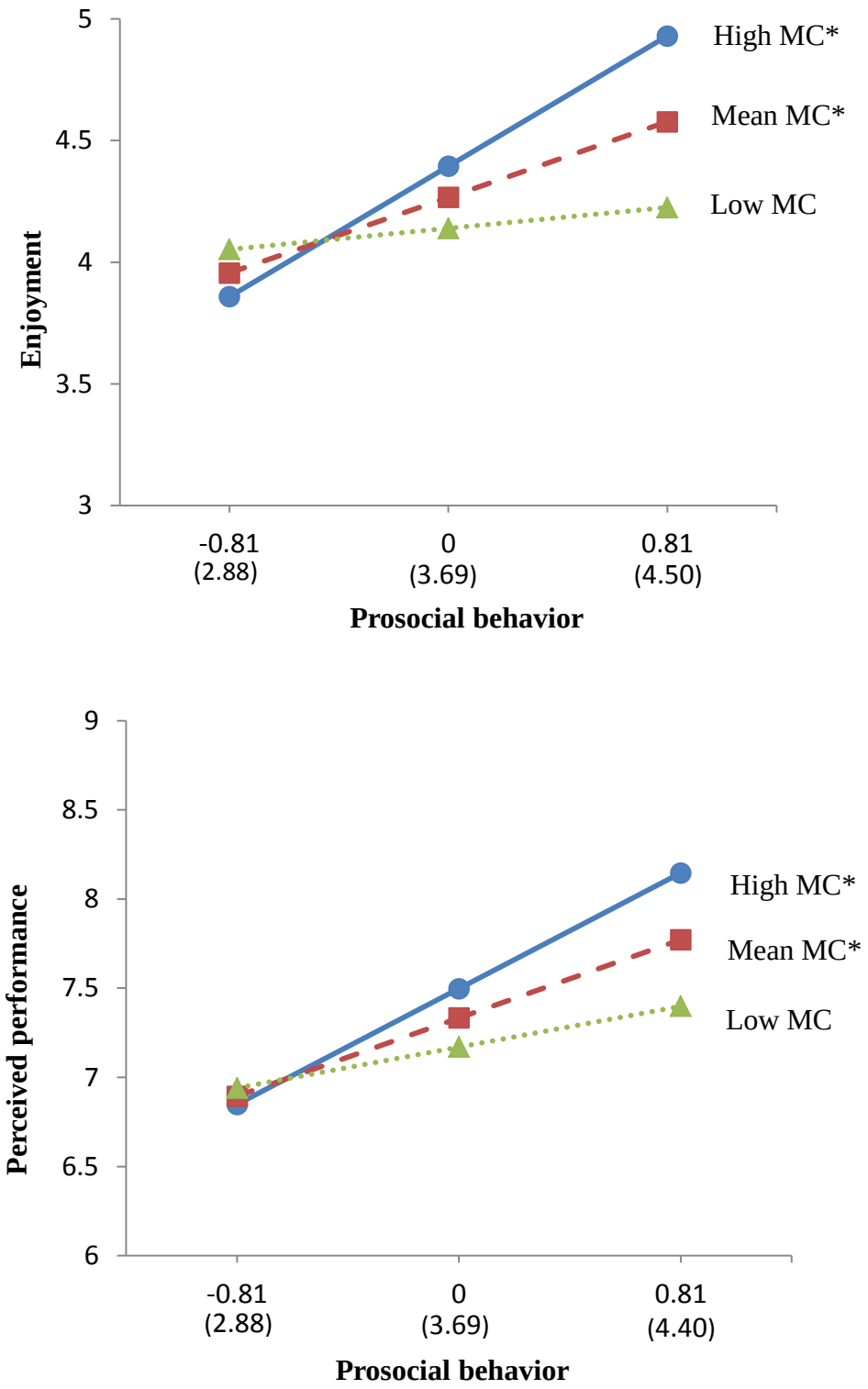

Fig. 2. Simple regression lines of the interaction between prosocial behavior and mastery climate (MC) for enjoyment (A) and performance (B). Enjoyment scores ranged from 1-7 while performance scores ranged from 1 to 10.

Note: * Significant slope.

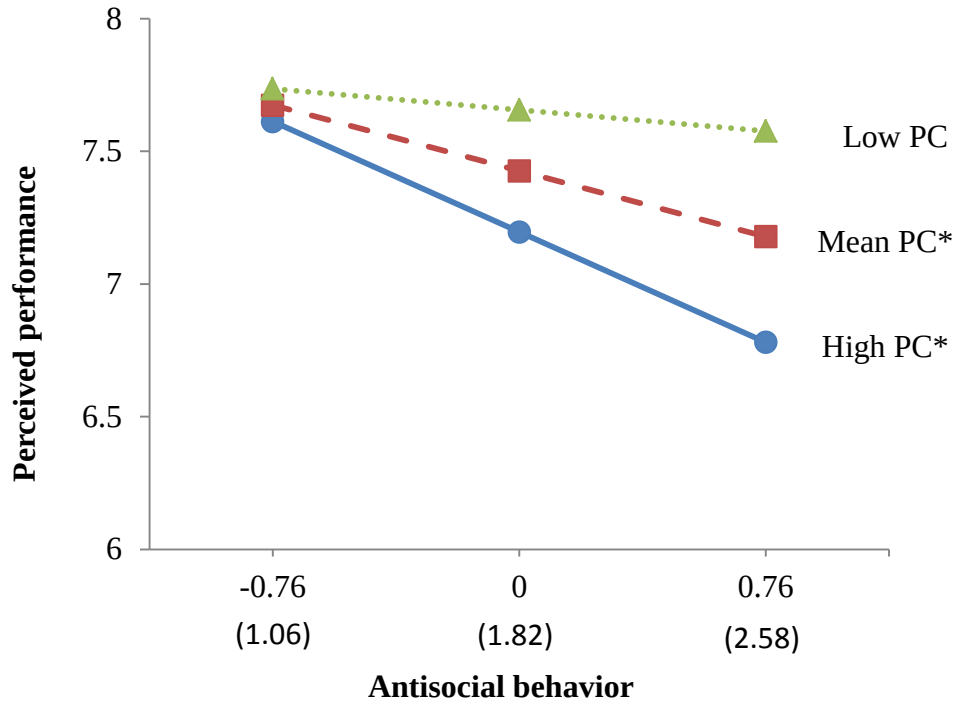

Fig. 3. Simple regression lines of the interaction between antisocial behavior and performance climate (PC) for performance. Performance scores ranged from 1 to 10.

Note: * Significant slope.